

APPLICANT(S): GAT, Tal et al.
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REMARKS

Applicants assert that the present invention is new, non-obvious and useful. Applicants respectfully request reconsideration of the above-identified application in view of the foregoing amendments and following remarks.

Status of Claims

Claims 1-4, 6-8, 11-16, and 20-25 are pending in the application. Claims 5, 9-10, and 17-19 have been canceled. Claims 1, 2, 11, 12, 14, 15, and 20 have been amended. New claims 23-25 have been added.

Claims 5, 9-10, and 17-19 have been canceled without prejudice or disclaimer. In making this cancellation without prejudice, Applicants reserve all rights in these claims to file divisional and/or continuation patent applications.

Claims 1, 2, 11, 12, 14, 15, and 20 have been voluntarily amended and new claims 23-25 have been added in order to further define what the Applicants consider to be the invention. Applicants respectfully assert that no new matter has been added by these amendments to the claims.

CLAIM REJECTIONS

35 U.S.C. § 112 Rejections

In the Office Action, the Examiner rejected claim 5 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As claim 5 has been cancelled without prejudice, this rejection is now moot. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §112 be withdrawn.

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35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 1, 7, 8, 9, 12, 17, and 20 under 35 U.S.C. §102(b), as being anticipated by Reinman et al., "Optimizations Enabled by a Decoupled Front-End Architecture" (hereafter referred to as "Reinman").

Regarding amended independent claims 1, 12, and 20, it is respectfully submitted that Reinman does not teach or suggest at least some elements of these claims, and therefore cannot anticipate amended independent claims 1, 12, and 20 or the claims dependent thereon.

For example, independent claims 1, 12, and 20, as amended, all recite, in paraphrase, *generating branch predictions for two sequential lines in parallel during a prediction period*. Applicants assert that Reinman does not teach or suggest at least this claimed feature of amended independent claims 1, 12, and 20.

Accordingly, a prima facie showing of anticipation cannot be established, and Applicants respectfully request that the rejections under 35 U.S.C. §102 be withdrawn.

Furthermore, it is respectfully submitted that at least the claimed feature of *generating branch predictions for two sequential lines in parallel during a prediction period*, as recited by amended independent claims 1, 12, and 20, would not have been obvious to one of ordinary skill in the art at the time the invention was made, specifically in view of Reinman, alone or in combination with other references of record, including the references of Stiles and Giacalone discussed below.

Accordingly, it is respectfully submitted that amended independent claims 1, 12, and 20 and claims 7 and 8 dependent thereon are patentable in view of Reinman, alone or in any combination with the other prior art references of record.

As independent claims 9 and 17 have been cancelled, their rejection is now moot.

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35 U.S.C. § 103 Rejections

Reinman

In the Office Action, the Examiner rejected claims 2, 5, 6, 10, and 18 under 35 U.S.C. §103(a) as being unpatentable over Reinman. The Examiner also rejected claims 3, 4, 13, 14, 19, 21, and 22 under 35 U.S.C. §103(a) as being unpatentable over Reinman in view of Stiles et al. (US 5,515,518). The Examiner also rejected claim 15 under 35 U.S.C. §103(a) as being unpatentable over Reinman in view of Giacalone et al. (US 6,272,624).

As discussed above, amended independent claims 1, 12, and 20 are patentable over any combination of Reinman, Stiles, and Giacalone, since none of Reinman, Stiles, and Giacalone, alone or in combination, teaches or suggests at least the claimed feature of *generating branch predictions for two sequential lines in parallel during a prediction period*, as recited by the amended independent claims.

Claims 2-4 and 6, 13-15, and 21-22 depend from amended claims 1, 12, and 20, respectively, and include all elements of those claims as well as additional distinguishing features. Therefore, in addition to any independent basis for patentability, it is respectfully submitted that claims 2-4 and 6, 13-15, and 21-22 are likewise patentable at least by virtue of their dependency.

Applicants respectfully disagree with the Examiner's contention in the Office Action that it would have been obvious that a branch predictor could take a single cycle to generate a branch prediction, and that thus it would have been obvious that two sequential predictions could be generated in two cycles, one after the other. For example, the Examiner's attention is respectfully directed to page 5, lines 28-31 of Applicants' specification: "In some embodiments, the throughput of a BPU 10 that would otherwise generate one prediction in a two cycle prediction period, may be improved to generate two predictions and to write such predictions to queue 16 in such prediction period."

In view of the above, Applicants respectfully request that the rejections under 35 U.S.C. §103 of dependent claims 2-4 and 6, 13-15, and 21-22 be withdrawn.

As claims 5, 10, 18, and 19 have been cancelled without prejudice, their rejection is now moot.

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Totsuka and Parady

The Examiner rejected claims 9, 11, 12, and 16 under 35 U.S.C. §103(a) as being unpatentable over Totsuka et al. (US 6,640,298) in view of Parady (US 6,907,520).

With regards to amended independent claim 12, Applicants respectfully assert that Totsuka and Parady, alone or in combination, do not teach or suggest at least some features of this claim, and therefore cannot make obvious amended independent claim 12, or the claims dependent thereon.

For example, amended independent claim 12 recites "said branch prediction unit to generate branch predictions for two sequential lines in parallel during a prediction period." It is respectfully submitted that none of the prior art references of record teach or suggest this feature of the amended independent claims, specifically including the references of Totsuka and Parady, as well as the references of Reinman, Stiles, and Giacalone discussed above.

Accordingly, a prima facie case of obviousness cannot be established, and Applicants respectfully request withdrawal of the rejections under 35 U.S.C. §103 of amended independent claim 12 and of claim 16 dependent thereon.

As independent claim 9 has been cancelled, its rejection is now moot.

Claim 11 depends from patentable base claim 1, and therefore includes all elements of that claim, including "generating branch predictions for two sequential lines in parallel during a prediction period," as well as additional distinguishing features. Therefore, in addition to any independent basis for patentability, it is respectfully submitted that claim 11 is likewise patentable over any combination of Totsuka and Parady, at least by virtue of dependency.

Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §103 of claim 11 be withdrawn.

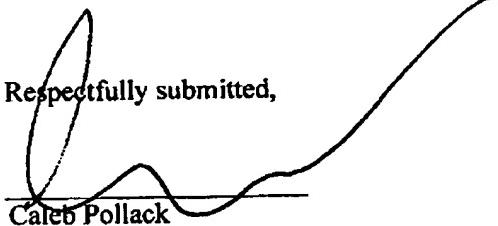
Finally, Applicants acknowledge the citation of non-applied references on page 15 of the Office Action, and respectfully submit that the pending claims are patentable over this art.

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Conclusion

In view of the foregoing amendments and remarks, Applicants submit that the pending claims distinguish over the prior art of record and are in condition for allowance. Favorable consideration and passage to issue are therefore respectfully requested.

The Examiner is invited to telephone the undersigned counsel to discuss any further issues yet to be resolved in connection with this application. Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,

Caleb Pollack
Attorney/Agent for Applicant(s)
Registration No. 37,912

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Pearl Cohen Zedek Latzer, LLP
1500 Broadway, 12th Floor
New York, New York 10036
Tel: (646) 878-0800
Fax: (646) 878-0801